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(54) Power MOSFET semiconductor device and method of manufacturing the same

(57) A semiconductor device includes a semiconductor substrate (11) of a first conductivity type, on which a semiconductor layer (12) having a trench (15) extending in the depth direction toward the semiconductor substrate (11) is formed. A first region (19) of the first conductivity type is formed in the depth direction along one side of the trench (15) in the semiconductor layer (12) and contacts the semiconductor substrate (11). A second region (25) of the first conductivity type is formed in a surface area of the semiconductor layer (12) and close to the trench (15) and contacts the first region (19). A third region (26) of the second conductivity type is formed in the surface area of the semiconductor layer (12). A fourth region (27) of the first conductivity type is formed in a surface area of the third region (26). A gate insulation film and a gate electrode (29) are provided on the surface of the third region (26) between the second region (25) and the fourth region (27).

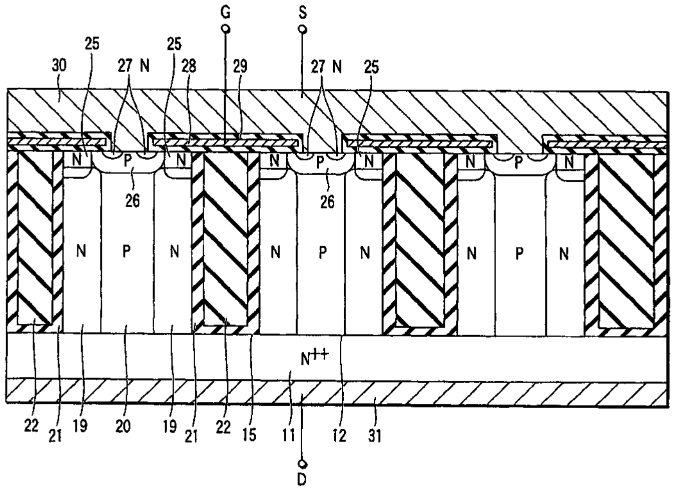

FIG.1

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EUROPEAN SEARCH REPORT

Application Number
EP 02 01 1514

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X	DE 196 04 043 A (SIEMENS AG) 7 August 1997 (1997-08-07) * abstract * * column 3, line 44 - column 4, line 40; figures 1,2,6 * ---	1,4,5, 7-11,14, 15,17-21	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	8 June 2004	Lantier, R

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82